REMARKS

This Amendment, submitted in response to the Office Action dated March 9, 2005, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-4 remain pending in the application. Claim 1 has been rejected under 35 U.S.C. § 102 as being anticipated by Zhang (U.S.P. 5,861,337, hereafter "Zhang '337"). Claims 2-3 have been rejected under 35 U.S.C. § 103 as being unpatentable over Zhang in view of Chenevas-Paule (U.S.P. 4,529,617). Claim 4 has been rejected under 35 U.S.C. § 103 as being unpatentable over Zhang '337 in view of Zhang (U.S.P. 5,424,244, hereafter "Zhang '244"). Applicant respectfully submits the following arguments in traversal of the prior art rejections.

Applicant's invention relates to an apparatus for manufacturing a semiconductor material. Conventional manufacturing techniques require semiconductor film formation and annealing steps, separated by wet cleaning steps in order to remove a native oxide film formed on the film. This increases the processing requirements for material formation and also creates a significant amount of chemical waste. Applicant's invention obviates the above deficiencies.

Referring to exemplary embodiments shown in Figs. 3 and 4, the present invention includes the various processing chambers to form a semiconductor film, an insulating film, a (hydrogen) annealing chamber and a laser irradiation chamber. The chambers are connected by a transport area or means which permits the material to be moved among the chambers without exposing the material to air. In Fig. 3, the exemplary transport device includes element 160 between chambers. In Fig. 4, the exemplary chamber includes a vacuum chamber 307. These

transport devices prevent air exposure of the material being fabricated, thereby mitigating the need for cleaning of the material during processing.

Turning to the cited art, Zhang '337 relates to a semiconductor film forming apparatus. Significantly, Zhang '337 teaches that dangling bonds should be maintained in the film while it is in the amorphous state. In this regard, hydrogen is driven out of a film to permit the dangling bonds to form. Col. 2, lines 22-57; col. 2, line 64 to col. 3, line 2. The reduction of hydrogen will allow the dangling bonds to form to thereby increase the rate of crystallization. Col. 3, lines 16-18. To the extent Zhang '337 discusses a vacuum, it is discussed in connection with the thermal annealing in a hydrogen-deprived environment and during subsequent crystallization.

Chenevas-Paule and Zhang '224 each also generally relate to the formation and annealing of a semiconductor material.

The Examiner contends that Zhang '337 teaches each feature of claim 1. Applicant submits that the rejection is not supported for at least the following two reasons.

First, contrary to the Examiner's contention, Zhang '337 does not teach a hydrogen annealing chamber. Though the Examiner cites Fig. 3, element 14 as teaching this feature, the chamber 14 is only described as an annealing chamber, but not a hydrogen annealing chamber as claimed. Applicant would further submit that Zhang '337 effectively teaches away from a hydrogen annealing chamber because it seeks to maintain dangling bonds in the semiconductor film to facilitate later crystallization. One skilled in the art would understand that hydrogen is commonly used to reduce dangling bonds. Thus, the absence of hydrogen during annealing is what Zhang '337 actually teaches.

Second, Zhang '337 does not teach a transport means that prevents air exposure of a substrate upon which a semiconductor device is to be formed. To the extent that Zhang '337 teaches vacuum processes, these only relate to an annealing chamber and a laser irradiation chamber. There is no suggestion that the substrate for the semiconductor is not exposed to air during transport between chambers. The Examiner is not free to assume that such a transport mechanism exists, and there is no inherent requirement that the material (along with its substrate) must not be exposed to air during transport among the film formation, annealing and crystallization steps. Therefore, claim 1 is not anticipated for at least these reasons.

Claims 2-4 are patentable based on their dependency.

With further regard to claims 2-3, the Examiner cites Chenevas-Paule in combination with Zhang '337 to teach the feature of these claims. However, Applicant submits that Chenevas-Paule does not make up for the deficiencies of Zhang' 337.

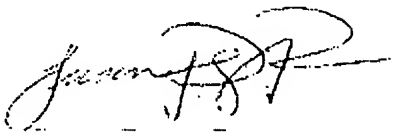
With further regard to claim 4, the Examiner cites Zhang '224 in combination with Zhang '337 to teach the feature of this claim. However, Applicant submits that Zhang '224 does not make up for the deficiencies of Zhang '337.

Applicant adds claims 5-6 to describe features of the invention more particularly.

In view of the above, Applicant submits that claims 1-6 are in condition for allowance. Therefore it is respectfully requested that the subject application be passed to issue at the earliest possible time. The Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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